

# Natural Regeneration

## Tennessee Department of Agriculture, Division of Forestry



There is seldom a need to plant hardwood seedlings. Nature usually provides too many new trees – up to 10,000 per acre! We can guide this process to favor a desirable mix of species with good form and vigor.

Forest regeneration (new trees) comes as seedlings, stump or root sprouts, and as “advance regeneration.”

- ◆ Seeds of some species can lie dormant on the forest floor for several years. Species that commonly regenerate from seed include yellow poplar, ash, maple, elm, sweetgum and sycamore. Seedlings often take a while to become established and begin rapid growth.
- ◆ Sprouts from stumps and roots are the most common means of regeneration in Mid-South forests. Sprouts grow from dormant buds at the base on the tree or on major roots. Oaks especially regenerate this way. Sprouts grow quickly because they draw on food stored in a large root system that formerly supported an entire tree. Advance regeneration includes any viable seedlings or saplings already present in the forest. Oak must be at least 4.5' tall and 1" in base diameter before it can compete successfully.

To get good natural regeneration

- ◆ Provide **sunlight**. Oak and most other highly-desirable timber and wildlife species must have pretty much full sun to do well.
- ◆ Cut low stumps. High stumps can introduce decay into the sprout. Sprouts emerging from

roots and from low on the stump chemically seal themselves off from decay.

- ◆ Deaden all but the best sprout on each stump, either by cutting or by girdling
- ◆ Cut or deaden cull trees

Deaden unwanted sprouts of **desired** species by cutting a 2" wide band through the outer bark and cambium (slick layer).

Deaden sprouts of **unwanted** species by spot spraying with Tordon, Velpar or Accord, or by the “hack and squirt” method, where wounds are made around each sprout and squirted or painted with herbicide.

Oak may appear to be scarce in the dense sapling stage, but within 10-20 years many competitors will drop out, leaving a more prominent oak component. Poplar may be very plentiful at first but tends to succumb to droughts on drier sites.

Growing oak on good sites is problematic. Intensive clearing of competitors is one option. Securing advance regeneration is another. This can be done by a modified shelterwood, where the midstory trees and 10% of the canopy is removed. This should provide enough sunlight for oak advance regeneration to develop. When it reaches 5-10 feet tall, the remainder of the stand is harvested. This technique is based on the fact that oak seedlings are fairly tolerant of shade until they reach sapling size.